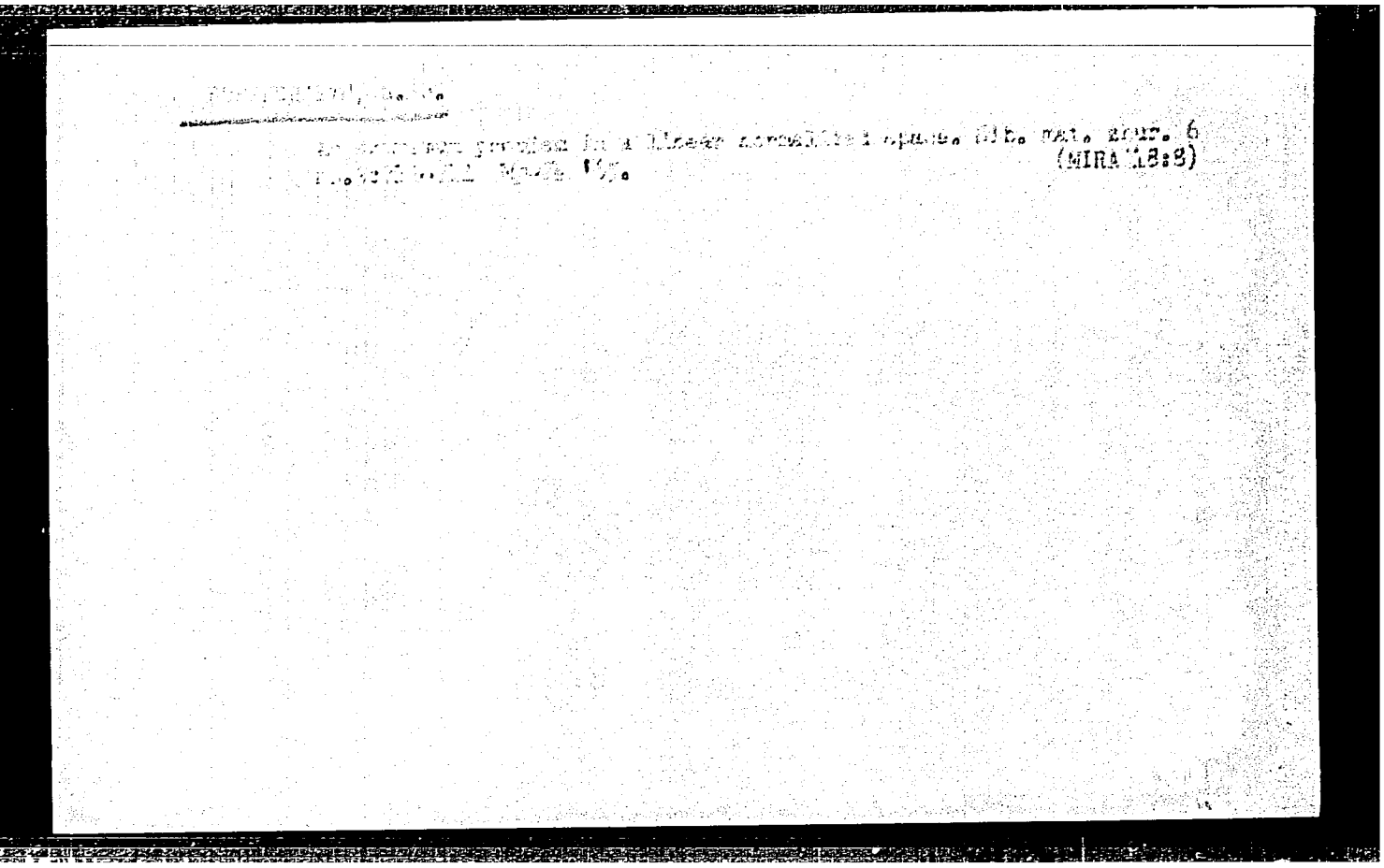

(MIRA 13:8)

RUBINSHTEYN, G. Sh.

Solving extensive linear programming problems. Optim. plan. no.2:3-22 '64. (MIRA 18:6)

BULAVSKIY, Vladimir Aleksandrovich; RUBINSHTEYN, Gennadiy Shlemovich; KANTOROVICH, L.V., akademik, otv. red.; ZAYTSEVA, I.P., red.

[Several lectures on linear programming] Neskol'ko lektsii po lineinomu programmirovaniiu. Novosibirsk, Red.-izd. otdel Sibirskogo otdeniia AN SSSR, 1965. 66 p. (MIRA 18:6)

RUBINSHTEYN, G.Sh.

Dual extremum problems. Dokl. AN SSSR 152 no.2:288-291 S '63.
(MIRA 16:11)

1. Institut matematiki s vychislitel'nym tsentrom Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom S.L. Sobolevym.

L 12881-63 EWT(d)/FCC(w)/BDS AFFTC IJP(C)

ACCESSION NR: AP3000507 S/0020/63/150/002/0231/0234

54

AUTHOR: Bulavskiy, V. A.; Rubinshteyn, G. Sh.

TITLE: Solution of the problem of convex programming with linear boundaries by the method of successive perfectization of the admissible vector

SOURCE: AN SSSR. Doklady, v. 150, no. 2, 1963, 231-234

TOPIC TAGS: convex programming, optimal vector

ABSTRACT: An optimal vector is obtained from a given admissible vector by means of an algorithm. Orig. art. has: 16 formulas.

ASSOCIATION: Institut matematiki s vychislitel'ny*m tsentrom Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Mathematics and Computer Center of the Siberian Division, Academy of Sciences SSSR)

SUBMITTED: 07Jul62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: MM NO REF SOV: 001 OTHER: 001

Card 1/1

L 12881-63 EWT(d)/FCC(w)/BDS AFFTC IJP(C)

ACCESSION NR: AP3000507 S/0020/63/150/002/0231/0234 54

AUTHOR: Bulavskiy, V. A.; Rubinshteyn, G. Sh.

TITLE: Solution of the problem of convex programming with linear boundaries by the method of successive perfectization of the admissible vector

SOURCE: AN SSSR. Doklady, v. 150, no. 2, 1963, 231-234

TOPIC TAGS: convex programming, optimal vector

ABSTRACT: An optimal vector is obtained from a given admissible vector by means of an algorithm. Orig. art. has: 16 formulas.

ASSOCIATION: Institut matematiki s vychislitel'ny*m tsentrom Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Mathematics and Computer Center of the Siberian Division, Academy of Sciences SSSR)

SUBMITTED: 07Jul62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: MM NO REF SOV: 001 OTHER: 001

Card 1/1

BULAVSKIY, V.A.; RUBINSHTEYN, G.Sh.

Solution of convex programming problems with linear limitations by successive refinement of the permissible vector. Dokl. AN SSSR 150 no.2:231-234 My '63. (MIRA 16:5)

1. Institut matematiki s vychislitel'nym tsentrom Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom S.L.Sobolevym. (Linear programming)

GAVURIN, M.K.; RUBINSHTEYN, G.Sh.; SURIN, S.S.

Optimum use of operation funds in the execution of several types of work (generalized transportation problem). Sib. mat. zhur. 3 no.4: 481-499 Jl-Ag '62. (MIRA 15:7)
(Linear programming)

S/044/62/000/011/061/064
A060/A000

AUTHOR: Rubinshteyn, G. Sh.

TITLE: Numerical methods for solving problems in linear programming

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1962, 66, abstract 11V353 (Tr. Nauchn. soveshchaniya o primenenii matem. metodov v ekon. issled. i planirovanii, 1960. T. 4, Moscow, AN SSSR, 1961, 7 - 19)

TEXT: A formulation is given of the fundamental problem in industrial planning, the definition of an admissible and optimal plan, the theorem on the existence of an optimal plan, the necessary and sufficient condition of optimality of an admissible plan, the formulation of the dual problem, and a description is given of an algorithm for the method of successive improvement of a plan, its comparison with Dantzig's simplex method and its modifications. If in the use of the simplex method the expansion of all the vectors in terms of the current base is not retained, but the inverse base is used, then the simplex method coincides completely with the method of successive improvement of the plan. The method of correction factors, proposed by L. V. Kantorovich in 1939

Card 1/2

S/044/62/000/011/061/064
A060/A000

Numerical methods for solving problems in...

is, in the author's opinion, better than the simplex method, since it is connected with a smaller number of computations. The application of the general scheme of the method of successive improvement of the plan to particular problems (transport problem, distribution problem and others) leads to considerable simplifications connected with the structure of the matrices of the systems of linear equations. The economic interpretation of the correction factors as relative estimates of the various ingredients is emphasized.

R. A. Zvyagina

[Abstracter's note: Complete translation]

Card 2/2

38837
S/199/62/003/004/001/002
B112/B104

IL 0200

AUTHORS: Cavurin, M. K., Rubinshteyn, G. Sh., and Surin, S. S.

TITLE: Optimum use of production means employing several modes of operation (generalized transportation problem)

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 3, no. 4, 1962, 481-499

TEXT: The case of m different production means and n modes of operation is considered. The productivity a_{ij} and the operating costs b_{ij} of the i-th production means for the j-th mode of operation are assumed to be known. The following fundamental problem of production planning is studied: the matrices

$$A = (a_{ij})_{\substack{i=1,\dots,m \\ j=1,\dots,n}}, \quad B = (b_{ij})_{\substack{i=1,\dots,m \\ j=1,\dots,n}}$$

and the numbers $k_1, k_2, \dots, k_n$ are given where

$a_{ij} \geq 0$, $b_{ij} > 0$, $k_j > 0$ ($i = 1,\dots,m$; $j = 1,\dots,n$). A matrix (planning)

Card 1/4

Optimum use of production ...

$$x = (x_{ij})_{\substack{i=1,\dots,m \\ j=1,\dots,n}}$$

is sought which fulfils the conditions

(1) $x_{ij} \geqslant 0$ $(i = 1,\dots,m;\ j = 1,\dots,n)$;

(2) $\sum_{j=1}^{n} x_{ij} \leqslant 1$ $(i = 1,\dots,m)$;

(3) $\sum_{i=1}^{m} a_{ij} x_{ij} = k_j$ $(j = 1,\dots,n)$;

(4) $\mu(x) = \sum_{i=1}^{m} \sum_{j=1}^{n} b_{ij} x_{ij} \min$

In order that the planning x may be optimal (i.e. so that condition 4 is fulfilled) the existence of a system of numbers $y_1, y_2, \dots, y_m, y_{-1}, y_{-2}, \dots, y_{-n}$ which satisfy the conditions

Card 2/4

(α) $y_i \geqslant 0$ $(i = 1,\dots,m)$;

(β) $a_{ij} y_{-j} \leqslant y_i + b_{ij}$ $(i = 1,\dots,m;\ j = 1,\dots,n)$;

(γ) $a_{ij} y_{-j} = y_i + b_{ij}$, for $x_{ij} > 0$ $(i = 1,\dots,m;\ j = 1,\dots,n)$;

(δ) $y_i = 0$ for $x_{io} = 1 - \sum_{j=1}^{n} x_{ij} > 0$ $(i = 1,\dots,m)$

is necessary and sufficient. A system of numbers y, which satisfies the conditions (γ) and (δ) is called a system of potentials for the planning x. The following method of potentials was used to solve the planning problem: An initial planning x which fulfills what are called the reliability conditions (1), (2), (3), is determined by certain recurrent relations between the potentials y. If, in addition, this planning satisfies the conditions (α) and (β), it is optimal and the solution process is terminated; otherwise, a new admissible planning

$$x' = (x'_{ij})_{\substack{i=1,\dots,m \\ j=1,\dots,n}}$$

Card 3/4

Optimum use of production ...

with the property $\mu(x') < \mu(x)$ is constructed the potentials of which are again clearly determined.

SUBMITTED: July 29, 1961

Card 4/4

KORBUT, A.A., mladshiy nauchnyy sotr.; NEMCHINOV, V.S., akademik, otv. red.; KANTOROVICH, L.V., otv. red. toma; GERCHUK, Ya.P., kand. ekon. nauk, dotsent, otv. red. toma; RUBINSHTEYN, G.Sh., kand. fiz.-matem. nauk, dotsent, otv. red. toma; SEREBROVSKIY, L.A., red. izd-va; VOLKOVA, V.V., tekhn. red.

[Works of the Scientific Conference on the Use of Mathematical Methods in Economic Planning and Research] Trudy Nauchnogo soveshchaniia o primenenii matematicheskikh metodov v ekonomicheskikh issledovaniiakh i planirovanii. 1960. Moskva, Izd-vo Akad. nauk SSSR. Vol.4. [Linear programming] Lineinoe programmirovanie. 1961. 126 p. (MIRA 15:1)

1. Nauchnoye soveshchaniye oprimenenii matematicheskikh metodov v ekonomicheskikh issledovaniyakh i planirovanii. 1960. 2. Chlen-korrespondent AN SSSR (for Kantorovich). 3. Moskovskiy institut stali (for Gerchuk). 4. Leningradskoye otdeleniye Matematicheskogo instituta im. V.A.Steklova AN SSSR (for Korbut). 5. Laboratoriya po primeneniyu matematicheskikh i statisticheskikh metodov v ekonomike Sibirskogo otdeleniya AN SSSR (for Rubinshteyn).

(Linear programming) (Economics, Mathematical)

29865
S/044/61/000/007/038/055
C111/C222

16.6500 16.9000

AUTHOR: Rubinshteyn, G.Sh.

TITLE: Numerical methods for the solution of problems of linear programming

PERIODICAL: Referativnyy zhurnal Matematika, no. 7, 1961, 13, abstract 7 V 68. ("Primeneniye matem. v ekon. issled" M., Sotsekgiz, 1959, 437-460)

TEXT: The author considers the following problem: Determine the maximal value of the function $\mu(h) = \min_i \sum_s a_i^s h_s/k_i$ under the condition that $\sum_{s=1}^{r} h_s = 1$, $h_s \geq 0$, where $k_i > 0$, $a_i^s \geq 0$ ($i = 1,\ldots, n$) are given numbers. The sought vector $h = (h_1,\ldots,h_r)$ is called the optimal plan. On the base of the formulated criterion for the optimality of the plan

Card 1/2

29865
S/044/61/000/007/038/055
C111/C222

Numerical methods for the solution ...

the author describes two methods for the solution of the considered problem. A numerical example is given.
The author formulates a more general problem which, according to the author, can be reduced to the considered problem by formal transformations. The iteration method due to Brown and Robinson is described for the fundamental problem of the theory of matrix games.

[Abstracter's note : Complete translation.]

Card 2/2

SHEYNMAN, L.B., inzh. ; RUBINSHTEYN, G.V., inzh.

Design of a low-pressure hydroelectric development in precast reinforced concrete. Gidr.stroi. 33 no.10:14-20 O '62. (MIRA 15:12)

(Hydroelectric power stations)
(Precast concrete construction)

YUDELOVICH, B.Yu.; RUBINSHTEYN, G.V.

Economical designs of precast reinforced concrete trestles for tubing. Prom. stroi. 41 no.4:31-34 Ap '64.
(MIRA 17:9)

L 20995-66 EWT(m)
ACCESSION NR: AP5019038

UR/0286/65/000/012/0069/0069
69.057.528

AUTHOR: Vorob'yev, A. I.; Ivanovskiy, G. V.; Komarov, A. K.; Tsikhona, V. A.; Sandomirskiy, G. B.; Rubinshteyn, G. V.

TITLE: A device for preparing concrete forms. Class 37, No. 172020

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 69

TOPIC TAGS: concrete structure, concrete, structural concrete, construction method

ABSTRACT: This Author's Certificate introduces a device for preparing concrete forms. The device is used when the blocks which make up a structure are being joined into a monolithic unit. The apparatus includes a panel which covers the joint, and a clamping attachment. Assembly and disassembly are simplified by making the clamping attachment in the form of a support and pneumatic tubes. The tubes are located between the support and the panel and are drawn together by rods. During setup, the free ends of the rods are connected with support girders located on the other side of the joint. These support girders remain in the structure after the blocks are joined into a single monolithic unit.

Card 1/3

L 20995-66

ACCESSION NR: AP5019038

ASSOCIATION: none

SUBMITTED: 07May63 ENCL: 01 SUB CODE: GO

NO REF SOV: 000 OTHER: 000

Card 2/3

L 20995-66
ACCESSION NR: AP5019038

ENCLOSURE: 01

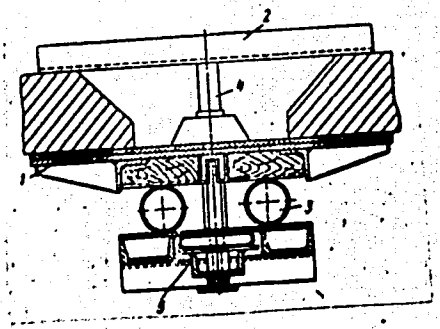

Fig. 1. 1--panel; 2--support; 3--pneumatic tube; 4--rod; 5--support girder

Card 3/3 BK

L 23939-65 EPF(c)/EWT(m)/T Pr-4 WE

ACCESSION NR: AP5004256 S/0065/65/000/001/0045/0049

AUTHOR: Rubinshteyn, I. A.; Sobolev, Ye. P.

TITLE: Properties inhibiting oxidation of organosulfur compounds and criteria for their determination B

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1965, 45-49

TOPIC TAGS: oxidation inhibitor, diesel fuel, organosulfur compound

ABSTRACT: A study has been made of the oxidation-inhibiting effect of 11 organosulfur inhibitors, such as β-thionaphthol and dibenzyl sulfide, in various concentrations in hydrodesulfurized diesel fuel. Four criteria were defined: optimum inhibitor concentration, inhibitor effectiveness, inhibitor stability, and inhibition rate gradient. It was found that these criteria adequately describe the oxidation-inhibiting properties, and reflect the individual chemical structures of the inhibitors. All 11 inhibitors showed oxidation-inhibiting properties, which were mainly dependent on the character of the C-S bond rather than on the chemical structure of the hydrocarbon radical. Orig. art. has: 5 tables and 3 formulas. [SM]

Card 1/2

L 23939-65
ACCESSION NR: AP5004256

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, FP

NO REF SOV: 004 OTHER: 002 ATD PRESS: 3176

Card 2/2

SOV/65-58-8-3/14

AUTHORS: Kichkin, G. I; Manishevskiy, V. G. and Rubinshteyn, I. A.

TITLE: Influence of the Chemical Composition of Lubricating Oils on Their Viscosity (Vliyaniye khimicheskogo sostava smazochnykh masel na ikh vyazkostnyye svoystva).

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr.8. pp. 15 - 20. (USSR).

ABSTRACT: One of the most important parameters during the determination of the useful properties of lubricating oils is the viscosity and its dependence on the temperature. It is mainly determined by defining its influence on friction and wear of the lubricated surfaces. The authors investigated two residual oils with a viscosity of 16 cps at 100°C (MT-16). One of these oils was prepared from sulphur-containing petroleum and the other from Emba petroleum. The viscosity between 50° - 100° was tested in a standard capillary viscosimeter and at temperatures of 20° and -40°C in a rotation viscosimeter constructed by V. P. Pavlov (Ref.1). The physico-chemical properties of the investigated oils are given in Table 1. It was found that the viscosity of the oil MT-16 from sulphur petroleum, at -40°C, was 1.6 times lower than for the oil MT-16 obtained from

Card 1/4

Influence of the Chemical Composition of Lubricating Oils on Their Viscosity.

Emba petroleum (Fig.1). The oils were deresinified by absorption on silica gel, and their viscosity determined within the previously defined temperature limits. It was found that the removal of the resinous substances lowered the viscosity by approximately 2 cps at 100°C: from 16.5 to 14.83 for the oil from the S-petroleum and from 16.4 to 14.4 cps for the oil from Emba petroleum. Fig.2: viscosity temperature curves of the deresinified oils. An analysis of the data given in Fig.3 (dependence of the viscosity on the temperature for naphthenic hydrocarbons) shows that the anomaly in the viscosity for naphthenic hydrocarbons separated from the oil MT-16 from S-petroleum occurs in a wider temperature interval than for analogous hydrocarbons of the MT-16 Emba oil. The degree of structure disintegration is three times larger for the S-petroleum oil than for the Emba oil (3.98 as against 1.37). Values in Table 2 (the viscosities of fractions of naphthenic and aromatic hydrocarbons) indicate that aromatic hydrocarbons have a higher degree of viscosity than naphthenic hydrocarbons, and also that the chemical composition of the oil from S-petroleum is more satisfactory with regard to its viscosity-temperature

Influence of the Chemical Composition of Lubricating Oils in Their Viscosity.

properties than the Emba oil. It can, therefore, be seen that sulphur compounds increase the degree of viscosity of the aromatic hydrocarbons and consequently that of the oil itself. After the removal of the sulphur compounds the viscosity of the aromatic hydrocarbons decreases at 100°C by 2.7 cps (from 20.8 to 18.1 cps). At practically identical molecular weight the naphthenic hydrocarbons of the S-oil differ from the naphthenes of the Emba oil by their lower viscosity and larger anomaly in their viscosity. This is due to the fact that the separation of the sulphur compounds lowers the concentration of polycyclic aromatic hydrocarbons. It was confirmed that the naphthenic and mono-cyclic aromatic hydrocarbons are the "carriers" of the anomaly in the viscosity of the lubricating oils, and that the polycyclic aromatic hydrocarbons do not influence the above-mentioned anomaly.

Influence of the Chemical Composition of Lubricating Oils on Their Viscosity.

This anomaly occurs in a defined temperature interval which is characteristic for each type of oil. There are 2 Tables, 4 Figures and 4 Soviet References.

1. Lubricating oils--Viscosity 2. Lubricating oils--Chemical properties 3. Viscosity--Determination

30222
S/081/61/000/019/067/085
B117/B110

11.0130

AUTHORS: Rubinshteyn, I. A., Losikov, B. V., Sobolev, Ye. P., Zaychik, M. G.

TITLE: Influence of organic sulfur compounds on the low-temperature properties and oxidizability of kerosene - gas-oil fractions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1961, 423, abstract 19M180 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikh-sya v neftyakh i nefteprodukt:kh". M., AN SSSR, 1959, 304 - 315)

TEXT: With the aid of gas oils from Romashki and Tuymazy petroleums it has been shown that sulfur compounds (SC) prevent the autocatalytic development of the oxidation process. The antoxidizing effect of SC consists in their reaction and the reaction of their oxidation products with peroxide radicals or hydrogen peroxides of hydrocarbons. Simultaneously, SC accelerate the oxidative polymerization and condensation leading to the accumulation of tarry substances. The least permissible concentration of SC in gas-oil from this standpoint depends on the chemical structure of

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30222
S/081/61/000/019/067/085
B117/B110

Influence of organic sulfur...

SC and on the composition of oxidizable gas-oil. At low concentration, SC prevent the formation of acid, hydroxyl-containing, saponifiable substances formed by oxidative decomposition of peroxides. The optimum total S concentration depends on the chemical structure of SC and, apparently, on the chemical composition of gas-oil. The tarry substances contained in Romashki gas-oil are no antoxidants and have no essential effect on the character and kinetics of its oxidation. A profound extraction of SC from kerosene - gas-oil fractions with a small (optimum) quantity of SC is required. The latter is determined in advance for the relevant petroleum product subjected to hydrogenetive refining. The presence of SC in paraffin petroleum products promotes the reduction of the temperature of structure formation. [Abstracter's note: Complete translation.]

Card 2/2

S/081/61/000/013/019/028
B110/B205

AUTHORS: Rubinshteyn, I. A., Kleymenova, Z. A., Sobolev, Ye. P.

TITLE: Analysis of the group composition of sulfur compounds of Diesel fuels by potentiometric titration

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1961, 530, abstract 13M326 (Metody analiza organ. soyedineniy nefti, ikh smesey i proizvodnykh. I. M. AN SSSR, 1960, 74 - 100)

TEXT: This article describes a method for the physicochemical analysis of sulfur compounds of Diesel fuels, which is based on a direct determination of sulfide, mercaptane, hydrogen sulfide, and elementary sulfur by potentiometric titration. A potentiometric method was elaborated for the determination of mercaptanes in Diesel fuels, which eliminates the effect of sulfides and yields reliable results with titration in air. It was shown that the titration of sulfides with potassium iodate in iodine chloride solution is accompanied by some parallel reactions. It was proved that the values obtained by a slow titration of a number of highly sulfurous Diesel fuels in iodine chloride

Analysis of the group...

solution are much too high. A tested and modified rapid method for the determination of sulfide was successfully applied. It was shown that sulfurous compounds of a number of Diesel fuels consist chiefly of sulfides of residual sulfur. The number of the remaining sulfur compounds does not exceed 5 - 10% of the total amount of sulfur. In slightly sulfurous Diesel fuels, organic sulfides constitute the principal class of sulfurous compounds. It is noted that the analysis described above is very accurate and can be carried out quickly. [Abstracter's note: Complete translation.]

Card 2/2

RUBINSHTEYN, I.A.; SOBOLEV, Ye.P.; KLEYMENOVA, Z.A.

Effect of sulfur compounds on the thermooxidative stability of diesel fuels. Khim.sera i azotorg.soed.sod.v neft.i nefteprod. 3:469-474 '60. (MIRA 14:6)

1. Nauchno-issledovatel'skiy institut goryuche-smazochnykh materialov.
(Sulfur organic compounds) (Diesel fuels)

RubinSHTEYN, I.A.

S/065/60/000/007/002/002
E194/E184

5.4300

AUTHORS: Losikov, B.V., Rubinshteyn, I.A., and Sobolev, Ye.P.

TITLE: A Method of Studying the Oxidation Kinetics and Thermal-Oxidation Stability of Petroleum Products

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No 7, pp 47-52

TEXT: This article describes an oxygen absorption test of the non-circulatory type which is not affected by variations in atmospheric pressure during the course of the test and in which there is provision for replacing oxygen consumed during the experiments. Oxygen absorption tests may be made of satisfactory repeatability when the equipment is sealed off from the atmosphere but the oxidation kinetics are liable to be influenced by deficiency of oxygen. Apparatus in which the oxygen can be replaced as it is used up is usually affected by small variations in atmospheric pressure. The rate of oxidation depends on the oxygen dissolved in the sample which is not much affected by small changes in pressure, which mainly affect the accuracy of the readings. To overcome this problem the oxygen absorption test described in the article is provided with a differential manometer, illustrated schematically in

Card 1/3

S/065/60/000/007/002/002
E194/E184

A Method of Studying the Oxidation Kinetics and Thermal-Oxidation Stability of Petroleum Products

Fig 1, in which the pressure in the equipment is balanced against that in a sealed-off bulb maintained in a thermostat. The U-tube is filled with dibutylphthalate. With this arrangement the pressure in the apparatus may be maintained constant irrespective of changes in the atmospheric pressure. When tests are carried out under air it is necessary to replace the oxygen used up and this is done by filling the measuring burette with oxygen before the start of the test so that the process of making a measurement of oxygen absorbed replaces the oxygen used by the system. These two principles are combined in the oxygen absorption apparatus illustrated diagrammatically in Fig 2. The equipment contains two test vessels with overhead condensers in an oil bath and provided with magnetic stirrers. The pressure indicator and gas burette described above are connected to the test vessels through a capillary tube. Arrangements are provided to fill the equipment with clean dry air or oxygen and to water jacket the gas burette and pressure indicator. The water jackets maintain constant temperature to within ± 0.05 °C for 100 hours and the oil bath to within ± 0.2 °C at test temperatures up

Card 2/3

S/065/60/000/007/002/002
E194/E184

A Method of Studying the Oxidation Kinetics and Thermal-Oxidation Stability of Petroleum Products

to 150 °C. The procedure for setting up the apparatus is described in detail, particularly the method of establishing the pressure in the test vessels. Two tests are run simultaneously on 20 g samples. When the equipment is ready it is heated up, which takes about 30 minutes, the pressure is adjusted, the magnetic stirrers are started and the test is commenced. The method of conducting the test is explained in detail and oxygen absorption measurements are made every hour. Thus, each reaction vessel is connected to the measuring system for 30 minutes and shut off for 30 minutes. Repeatable oxygen absorption curves were obtained in 24 hour tests on diesel fuel and oils at temperatures ranging from 100 to 170 °C. Typical test results are plotted in Fig 3. The procedure was tested by S.R. Sergiyenko and P.N. Galich of the Laboratory of High Molecular Compounds of the Institute of Geology AS USSR who also obtained good reproducibility of oxygen absorption curves in 100 hour tests at 150 °C. The sensitivity of reading is about 0.1 ml of oxygen at 25 °C with the pressure maintained constant.
There are 3 figures, and 1 table.

Card 3/3

28014
Z/011/61/018/009/002/009
E073/E565

5.52220 (1282, 1273, 1350)

AUTHORS: Rubinshteyn, I.A. and Kleymenova, Z.A.

TITLE: Determination of active sulphur in diesel fuels by potentiometric titration

PERIODICAL: Chemie a chemická technologie; Přehled technické a hospodářské literatury, v.18, no.9, 1961, 421, abstract Ch61-5828 (Khimiya i tekhnologiya topliv i masel, no.10, 1960, 55-61)

TEXT: Simple and accurate method of quantitative determination of active sulphur in diesel fuels. The qualitative determination can be carried out during titration. The potentiometric titration by means of an aqueous solution of $AgNO_3$ enables titrating mercaptans and elementary sulphur independently of the content of sulphides. 4 figures, 4 tables, 16 references.

[Abstractor's Note: Complete translation.]

Card 1/1

RUBINSHTEYN, I. A.

Cand Chem Sci - (diss) "Development of scheme and potentiometric methods of analysis of group composition of sulfurous compounds contained in diesel fuels." Moscow, 1961. 27 pp; 1 page of diagrams; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Labor Red Banner Inst of Petrochemical and Gas Industry imeni I. M. Gubkin); 160 copies; price not given; (KL, 7-61 sup, 222)

S/081/62/000/008/021/057
B160/B101

AUTHORS: Rubinshteyn, I. A., Kleymenova, Z. A., Sobolev, Ye. P.

TITLE: Potentiometric determination of the group composition of organo-sulfur compounds contained in diesel fuels

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1962, 137, abstract 8D172 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikhsya v neftyakh i neftoproduktakh. v. 4". M., Gostoptekhizdat, 1961, 82 - 91)

TEXT: The authors suggest a method for determining the group composition of sulfur-containing compounds in diesel fuel which employs potentiometric titration only. The presence of H_2S, mercaptans and elemental sulfur is first determined qualitatively. If there is no H_2S or S the various groups of organo-sulfur compounds are determined by titrating separate weighed amounts of the fuel. Mercaptans are titrated with a 0.01 normal solution of $[Ag(NH_3)_4]NO_3$ with an Ag/AgS indicator electrode; up to 0.5 g is put into 25 - 30 ml of alcohol-benzene solution (2:1). When there is

Card 1/3

no S present mercaptans and H_2S are determined by titration from two potential jumps in a single weighed portion dissolved in an alcohol-benzene mixture containing 13.7 g/l of CH_3COONa. When RSH, S and H_2S are present together the latter is removed by the action of $CdCl_2$ and RSH and S are titrated in a single weighed portion; when the concentration ratio is RSH:S $\geq$1 a curve with two inflexions is obtained; when it is RSH:S < 1 there is one inflexion and only the mercaptans are determined. In this case a known quantity of aliphatic RSH is introduced into the sample to determine the S. The first potential jump marks the S content. In this case 6 ml of CH_3COOH are put into the alcohol-benzene mixture instead of the same volume of C_6H_6; titration is carried out with no air present. Before the disulfides (RSSR) are reduced the S is removed from the sample by shaking it with 5% by volume of metallic mercury. A weighed sample is taken from the purified sample for a check determination of the RSH and the rest is reduced with a mixture of Zn and CH_3COOH; the RSSR is determined in the form of RSH. When there is no H_2S and S the RSH may be determined without

Potentiometric determination... S/081/62/000/008/021/057
B160/B101

removing the air from the solution. Using a solution of $[Ag(NH_3)_4]^+$ instead of a solution of Ag^+ increases the selectivity of the reaction with RSH. The sulfide content can be determined by quick titration with a solution of KIO_3 in a hydrochloric or chlorine iodide solvent (RZhKhim, 1959, no. 19, 69237). [Abstracter's note: Complete translation.]

Card 3/3

36351

S/081/62/000/005/076/112
B162/B101

11,0140

AUTHORS: Losikov, B. V., Smirnov, M. S., Aleksandrova, L. A., Rubinshteyn, I. A., Ocheretyanyy, I. T., Dneprov, V. N.

TITLE: Application of neutralizing substances in engines working on high-sulfur diesel fuels

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 526, abstract 5M200 (Sb. "Prisadki k maslam i toplivam". M., Gostoptekhizdat, 1961, 381-388)

TEXT: Results of tests on diesel engines type 1[illegible] -10.5/13 (1Ch - 10.5/13), 2 -8.5/11 (2Ch - 8.5/11), IT-9 - 3 (IT - 9 - 3), 3[illegible] - 6 (3D - 6), - 50[illegible] (M - 50F), and 2[illegible] - 100 (2D - 100) working on fuels with a sulfur content of 1.0 to 1.6% with ammonia gas fed to the combustion chamber of the engines in an amount of 0.08 - 0.14% by weight with respect to the fuel are given. It is shown that ammonia is a highly efficient means of reducing corrosion wear of the engines, preventing the formation of deposits and the burning of piston rings. It is found that the action

Card 1/2

of ammonia is linked with its ability of slowing down the formation of sulfuric anhydride during the combustion of the sulfur contained in the fuel. An explanation is given of the mechanism by which the ammonia acts on the basis of the idea of radical-chain mechanism of oxidation of sulfur compounds. [Abstracter's note: Complete translation.]

Card 2/2

33589
S/204/61/001/005/007/008
E075/E484

15.4100
11.9100

AUTHORS: Kreyn, S.E., Rubinshteyn, I.A., Popova, Ye.A.

TITLE: Influence of organic sulphur compounds on the oxidation of stability of lubricating oils

PERIODICAL: Neftekhimiya, v.1, no.5, 1961, 683-690

TEXT: The paper describes investigations into the oxidizability of lubricating oil distillates from Tuymazy crude oil subjected to different depths of phenol extraction. The oils contained from 6.3 to 25.3% sulphur compounds and from 16.9 to 34% aromatic hydrocarbons. The saturate content varied between 76.8 and 40.7%. In addition a series of oils was studied containing from 4.2 to 11.2% of the same type of sulphur compounds. The oils with a low sulphur content were prepared by oxidation with 30% H_2O_2 in acetic acid for 3 h at 70°C, followed by silica gel separation of the oxidized sulphur compounds. The oxidation was studied by obtaining oxygen absorption curves at 150, 170 and 200°C for 24, 12 and 6 hours respectively. After oxidation, the amounts of strong (sulphonic) and weak acids were estimated by potentiometric titration and sludge determined by filtration and weighing. It

Card 1/3

Influence of organic sulphur ...

was concluded from the results that the best temperature of oxidation was 170°C. At this temperature full oxidation took place in 12 hours and good differentiation between different oils was obtained. The results show that the oxidation stability of the phenol extracted oils increases with the depth of extraction. The oxidation of the oils containing different amounts of the same type of sulphur compounds indicated that an optimum concentration of the latter exists, which gives the greatest oxidation stability. This concentration is approximately 0.4%. It is thought that the sulphur compounds in general oxidize more readily then the hydrocarbons and at low concentrations decompose peroxides. At high concentrations, however, the sulphur compounds react directly with oxygen and then the oxidation rate increases. The formation of sulphonic acids takes place only when the sulphur content is above about 0.4% and then increases linearly with the sulphur content. The total acidity also increases linearly with the sulphur content and its minimum value is reached at the sulphur content of 0.4 to 0.5%. The amount of sludge forming on oxidation is proportional to the square of the sulphur content in

ENGLIN, B.A.; OTKUPSHCHIKOV, G.P.; RUBINSHTEYN, I.A.

Effect of the temperature and quality of fuel on the deposition of tar on nozzle atomizers. Khim.i tekh.topl.i masel 6 no.3:55-60 Mr '61. (MIRA 14:3)

(Fuel) (Nozzles)

S/065/61/000/003/002/004
E194/E284

AUTHORS: Englin, B. A., Otkupshchikov, G. P. and Rubinshteyn, I. A.

TITLE: The Influence of Temperature and Fuel Quality on the Lacquering of Injection Nozzles

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1961, No. 3, pp. 55-60

TEXT: Rig tests were made to study the influence of temperature and fuel quality on the lacquering of diesel engine injection nozzles. In the rig filtered fuel was delivered by a fuel pump to six nozzles each with its own measuring vessel. The nozzles were maintained at the required temperature by means of a thermostatic bath so that the fuel became hot and could oxidize and resins could form in it. The tendency of the fuel to form lacquer deposits on the nozzle needles was assessed from the thickness of the lacquer films on the non-working part of the needle and by the condition of the needles. The temperature at which, during the test period, a lacquer film just visible to the naked eye was formed was defined as the initial lacquering temperature. The fuels tested included diesel fuel grade

Card 1/3

S/065/61/000/003/002/004
E194/E284

The Influence of Temperature and Fuel Quality on the Lacquering of Injection Nozzles

A3 ГОСТ 4749-49 (DZ to standard GOST 4749-49) containing 0.157% sulphur, diesel fuel АТС-0.3 (DTS-0.3), АТС-1.0 (DTS-1.0) and АТС-1.16 (DTS-1.16) (in each case the number refers to the sulphur content), catalytic diesel fuel grade DTK with a sulphur content of 0.13 and synthetic diesel fuel obtained by hydrogenation of coal tar with a sulphur content of 0.035. The initial lacquering temperature depends very much on the fuel quality, thus in fuels DTS-1.16, DTK and the synthetic fuel lacquering had already commenced at a temperature of 124-132°C, the corresponding temperature for fuel DTS-1.0 was 166°C and for fuel DZ over 170°C. With increasing temperature lacquer formation was most intensive with the synthetic fuel. The results clearly show that the nozzle operating temperature in diesel engines is the main factor leading to lacquering of the nozzles. It was found that the actual resin content determined according to standard test method ГОСТ 8489-57 (GOST 8489-57) does not characterize the lacquering tendency of the fuel. Neither is there any direct relationship between the

Card 2/3

S/065/61/000/003/002/004
E194/E284

The Influence of Temperature and Fuel Quality on the Lacquering of Injection Nozzles

total sulphur content of the diesel fuel and the needle lacquering tendency. However, there is a certain inter-relationship between the mercaptan and adsorbable resin content of the fuels and the lacquering tendencies. Special tests revealed that the formation of lacquer in nozzles at temperatures below 190°C is due to mercaptans and adsorbable highly oxidized resinous components of the fuel. At temperatures of 190°C and above hydrocarbon components of the fuel can themselves form lacquer in the nozzles. The results relate to tests of 20 hours. It is also shown that when the diesel fuels are oxidized at temperatures above 120-130°C the resinous compounds are polymerized, which does not occur at lower temperatures. The intensity of the polymerization processes that takes place at these temperatures determines the degree of lacquering of the nozzles. There are 4 tables and 11 references: 7 Soviet and 5 non-Soviet.

Card 3/3

LOSIKOV, B.V.; SMIRNOV, M.S.; RUBINSHTEYN, I.A.; ALEKSANDROVA, L.A.; OCHERETYANNYY, I.T.; DNEPROV, V.N.

Use of "neutralizing" substances in engines operating on high-sulfur diesel fuels. Khim.i tekh. topl.i masel 6 no.2:46-52 F '61. (MIRA 14:1)

(Diesel fuels)

ACC NR: AP6023960 SOURCE CODE: UR/0204/66/006/002/0241/0248

AUTHOR: Kreyn, S. E.; Rubinshteyn, I. A.; Popova, Ye. A. 38 B

ORG: none

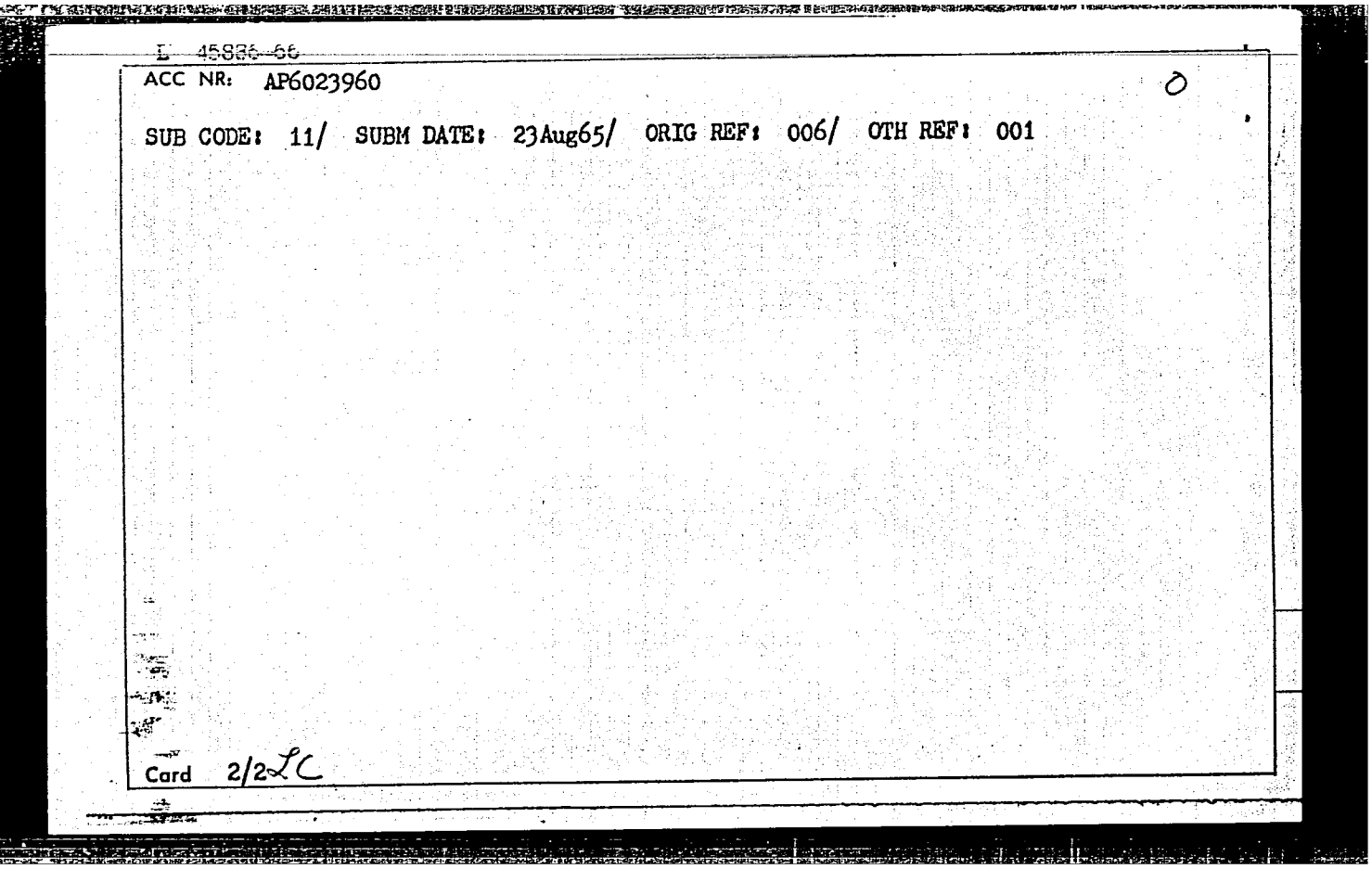
TITLE: Antioxidant properties of organic sulfur compounds present in petroleum oils, and possible formation of aryl sulfide complexes

SOURCE: Neftekhimiya, v. 6, no. 2, 1966, 241-248

TOPIC TAGS: organic sulfur compound, antioxidant additive

ABSTRACT: The paper discusses the antioxidant properties of organic sulfur compounds contained in narrow chromatographic fractions isolated form the sulfur aromatic concentrate of the Tuymazy petroleum distillate with $\nu_{100°}$ = 10 centistokes. The antioxidant properties of the compounds were found to increase with the degree of their cyclic character; their inhibiting capacity considerably exceeds that of the hydrocarbons with which they are associated. The various organic sulfur compounds present in the distillate differ in the mechanism of their action and manifest their maximum effectiveness at certain definite concentrations in the oil which are characteristic of each group. The organic sulf[illegible] inhibitors may form associates with aromatic hydrocarbons and organic sulfur compounds whose molecules contain aromatic polynuclei. The formation of associates decreases the antioxidant effect of organic sulfur and aromatic inhibitors. Orig. art. has: 2 figures and 5 tables.

Card 1/2 UDC: 665.521.5:665.547.7.094.38



L 45836-66

ACC NR: AP6023960 O

SUB CODE: 11/ SUBM DATE: 23Aug65/ ORIG REF: 006/ OTH REF: 001

Card 2/2 LC

ACC NR: AP6034779 (AN) SOURCE CODE: UR/0065/66/000/009/0049/0050

AUTHOR: Sobolev, Ye. P.; Churshukov, Ye. S.; Rozhkov, I. V.; Rubinshteyn, I. A.

ORG: none

TITLE: Investigation of corrosion aggressiveness of sour diesel fuels

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 9, 1966, 49-50

TOPIC TAGS: fuel corrosiveness, sour fuel, sour diesel fuel, steel corrosion

ABSTRACT: The effect of the chemical structure of eleven organosulfur compounds on the oxidizability and corrosion properties of diesel fuels has been investigated.
1. The corrosiveness of sour diesel fuels is directly related to the chemical structure of organosulfur compounds contained in these fuels.
2. The maximum effect on the corrosion of steel was found in fuels containing mercaptans, particularly the aromatic ones. The rate of steel corrosion in the presence of mercaptans is 3—4 times greater than that of the same fuel containing 80 times more sulfides and thiophenes.
3. The decisive effect on steel corrosion in sour diesel fuels occurring during

Card 1/2 UDC: 620.193.665.521.4

ACC NR: AP6034779

storage or use is not produced by the organosulfur compounds themselves, but by the sulfuric acid and sulfonic acids formed during the oxidation of these compounds. 4. Steel corrosion occurring in sour diesel fuels as a result of reaction with organosulfur compounds amounts to 3—20% of the total corrosion observed in these fuels.

[KP]

SUB CODE: 21/SUBM DATE: none/ORIG REF: 007/OTH REF: 003/

Card 2/2

L 1553-66 FSS-2/EWT(1)/FS(τ)-3/FCC/EWA(d)/EWA(h) TT/GS/GW

ACCESSION NR: AT5023610 UR/0000/65/000/000/0394/0405

AUTHOR: Vernov, S. N.; Chudakov, A. Ye.; Vakulov, P. V.; Gorchakov, Ye. V.; Kuznetsov, S. N.; Logachev, Yu. I.; Nikolayev, A. G.; Sosnovets, E. N.; Rubinshteyn, I. A.; Stolpovskiy, V. G.; El'tekov, V. A.

TITLE: Geometric position and particle composition of the earth's radiation belts

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 394-405

TOPIC TAGS: cosmic radiation, earth radiation belt, cosmic ray, Elektron 1, Elektron 2

ABSTRACT: An exhaustive study is made of data recorded by the Elektron-1 and -2 satellites, which were launched on 30 January 1964. Orbital data are given in Table 1 of the Enclosure. The first orbits were positioned so that the satellites passed their apogee at about 3 o'clock a.m. local time. The outer boundary of the radiation belt was thus crossed at about midnight and again at about 7—8 a.m. on the return branch of the orbit. The subsequent orbits were shifted toward the sunset: Elektron-1, by 8 min, and Elektron-2, by about 4 min in the 24-hr period. Elek-on

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L 1553-66

ACCESSION NR: AT5023610

tron-1 and -2 were equipped with similar instrumentation. In some cases, however, there were differences in energy thresholds. A chart summarizing all data shows the electron and proton fluxes of different energies in the equatorial plane and for comparison gives IMP-1 data. The following conclusions can be made from the chart: 1) A belt of artifically injected electrons exists at distances closest to the Earth's center. The maximum of the belt in February 1964 was at L = 1.35. The flux of electrons with energy above 2 Mev at the maximum was about 1×10^7 $cm^{-2} \cdot sec^{-1} \cdot ster^{-1}$. 2) The average directed flux of protons with an energy of 45—70 Mev at the maximum of the inner belt (L = 1.45) was about 1.5×10^3 $cm^{-2} \cdot sec^{-1} \cdot ster^{-1}$. A change in the integral spectrum at proton energies above 50 Mev was observed at L = 2.2; the spectrum of these energies is in the process of hardening, which could be explained by the theory of albedo neutrons. 3) The spatial distribution of protons with an energy of one to several Mev differs from that of the electrons. There is a definite regularity in the distribution of protons according to their energies. The average directed flux of protons with an energy above 2 Mev was about 4.5×10^5 $cm^{-2} \cdot sec^{-1} \cdot ster^{-1}$ in the equatorial plane at L = 2.8. It appears that the majority of the protons in this energy range are created by transverse drift with respect to the magnetic field lines. 4) A belt of high-energy electrons was observed at L = 2.75. Its width at the equator was about 0.4 earth radii. The average directed flux of electrons above 6 Mev was about 10^2 $cm^{-2} \cdot sec^{-1} \cdot ster^{-1}$. 5) A minimum of distribution

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L 1553-66

ACCESSION NR: AT5023610

of electrons of above 150 kev energy was observed in the region between L = 3 and L = 4. The altitude intensity shift is subject to large fluctuations in time and may drop at times to negligible magnitudes. 6) The maximum of the outer belt is positioned, on the average, at L = 4.8. The maximum altitude intensity shift indicator m = 0.5 +0.3/-0.2 within a wide range of L. There is a sharp intensity jump on the night side at L = 7 ± 0.5. On the morning side, a slow monotonic drop of intensity was observed. The average directed flux of electrons with an energy of over 70 kev at the maximum of the outer belt is about 5×10^6 $cm^{-2} \cdot sec^{-1} \cdot ster^{-1}$ and can change by more than an order of magnitude. The electron energy spectrum observed within the 70 to 600 kev range is in agreement with the data of other researchers. The electron energy spectrum in the energy range above 1 Mev appears to be softening, in comparison with measurements of earlier years. Orig. art. has: 11 figures. [FP]

ASSOCIATION: none

SUBMITTED: 02Sep65 ENCL: 01 SUB CODE: AA, SV

NO REF SOV: 007 OTHER: 004 ATD PRESS: 4094

Card 3/4

4

L 3096-66 FSS-2/EWT(l)/FS(v)-3/FCC/EWA(d) TT/GS/GW
ACCESSION NR: AT5023615 UR/0000/65/000/000/0433/0434

AUTHORS: Vernov, S. N.; Chudakov, A. Ye.; Vakulov, P. V.; Gorchakov, Ye. V.; Logachev, Yu. I.; Nikolayev, A. G.; Rubinshteyn, I. A.; Sosnovets, E. N.; Ternovskaya, M. V.

TITLE: Pulsations of the earth's magnetic field, from the measurements taken by the Elektron-3 satellite

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 433-434

TOPIC TAGS: satellite, satellite data analysis, pulse counter, pulse amplifier, pulse amplitude, earth magnetic field

ABSTRACT: The Elektron-3 satellite, launched on July 11, 1964, carried a coil with a ferrite core. Signals from this coil were transmitted to two amplifying circuits, one for the band of 1—10 cps, the other for 30—300 cps. Both circuits recorded pulses with amplitudes exceeding ~1, ~5, ~25 γ. The type and operation of the memory bank are briefly described. From a small amount of data processed it can be seen that no pulses with the amplitudes ≥25 γ were recorded, that at

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L 3096-66
ACCESSION NR: AT5023615 O

the maximum sensitivity ($\gtrsim 1\gamma$) the count exceeded seven pulses per 2 minutes, and that at the intermediate sensitivity ($> 5\cdot\gamma$) about 2—3 pulses were recorded by the low-frequency circuit and about 1 by the high-frequency circuit. It is noted that the number of magnetic field pulses with the amplitude $\gtrsim 5\gamma$ is generally greater in the frequency region of 1—10 cps than in the region of 30—300 cps and that the pulse intensity tends to increase in some geographical regions. Normally, this increase is recorded by the low-frequency circuit but not by the high-frequency one. [04]

ASSOCIATION: none [illegible] Zemlike kosmicheskogo prostranstva

SUBMITTED: 02Sep65 ENCL: 00 SUB CODE: ES, SV

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4106

Card 2/2

RUBINSHTEYN, I.A.; SOBOLEV, Ye.P.

Antioxidation properties of organosulfur compounds and their evaluation criterion. Khim.i tekh.topl. i masel 10 no.1:45-49 Ja '65. (MIRA 18:4)

L 8426-65 EWT(m)/EPF(c)/EWP(j)/T/EWP(q)/EWP(b) Pc-4/Pr-4 AFTC(p)/ASD(m)-3/
SSD RM/WE/JD/WB

ACCESSION NR: AT3001315 S/2933/63/005/000/0183/0187

AUTHOR: Rubinshteyn, I. A.; Churshukov, Ye. S.; Rozhkov, I. V.; Danilova, T. A.; Tits-Skvortsova, I. N.

TITLE: Effect of sulfides and mercaptans on the corrosiveness of diesel fuels

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy soderzhashchikhsya v neftakh i nefterproduktakh, v. 6, 1963, 183-187

TOPIC TAGS: fuel oil, diesel oil, sulfide, mercaptan, sulfonic acid, oxidation, corrosion

ABSTRACT: The corrosiveness of fuel containing organic sulfur compounds depends [illegible] chemical structure, and increases in the presence of excess [illegible] the mechanism of the corrosive action of diesel fuels

L 8426-65
ACCESSION NR: AT3001315

experiments was satisfactory. The effect of various sulfides and mercaptans on the corrosiveness of hydrorefined diesel fuels is compared in Figs. 1 and 2 of the Enclosure. The inhibition of the corrosion processes on the moistened metal surface is due to a change in the nature of the oxidation processes observed after the addition of sulfide sulfur to the

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L 8426-65
ACCESSION NR: AT3001315

2

khimii nefti, MGU im. M. V. Lomonosova (Department of Petroleum Chemistry, Moscow State University) and the Institut organicheskoy khimii BashFAN SSSR (Institute of Organic

Chemistry, Bashkir Branch, Ufa, USSR, respectively. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 02 SUB CODE: FP

NO REF SOV: 001 OTHER: 001

Card 3/5

L 81.26-65
ACCESSION NR: AT3001315

ENCLOSURE: 01

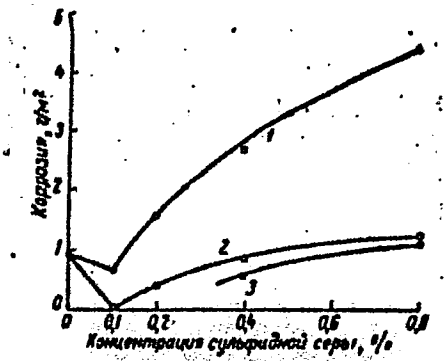

Fig. Effect of sulfides on the corrosivity of hydrorefined diesel fuel:

1 - dibenzylsulfide; 2 - diheptylsulfide; 3 - dibenzylsulfide (in an atmosphere of N_2).

Ordinate: corrosion in g/m^2; abscissa: concentration of sulfide S in %.

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L 8426-65
ACCESSION NR: AT3001315

ENCLOSURE: 02

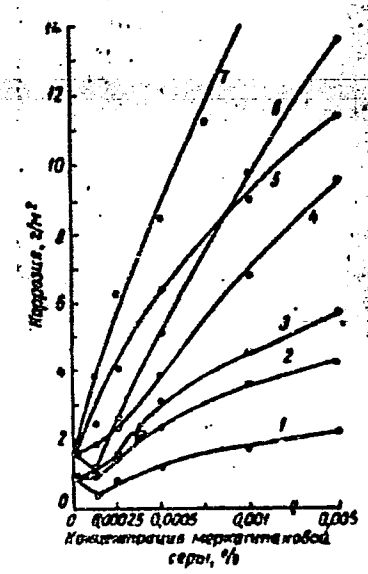

Fig. 2. Effect of mercaptans on the corrosivity of hydrorefined diesel fuel:
1 - decylmercaptan; 2 - p-thiocresol;
3 - benzylmercaptan; 4 - β -thionaphthol;
5 - cyclohexylmercaptan; 6 - α -thionaphthol;
7 - α -phenylethylmercaptan
Ordinate: corrosion in g/m^2; abscissa: concentration of sulfide S in %.

5/5

SOBOLEV, Ye.P.; POPOVA, Ye.A.; RUBINSHTEYN, I.A.

Differential potentiometric titration of carboxylic and corrosive acids in sulfur-containing petroleum products. Khim.i tekh.topl.i masel 8 no.2:56-61 F '63. (MIRA 16:10)

KREYN, S.E.; RUBINSHTEYN, I.A.; POPOVA, Ye.A.

Effect of chemical composition of oils on their stability during oxidation. Neftekhimiia 3 no.4:584-593 Jl-Ag '63. (MIRA 16:11)

S/065/63/000/002/007/008
E075/E436

AUTHORS: Sobolev, Ye.P., Popova, Ye.A., Rubinshteyn, I.A.

TITLE: Differential potentiometric titration of carboxylic and aggressive acids in sulfurous petroleum products

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.2, 1963, 56-61

TEXT: A method was developed for the determination of strong acids such as sulfonic acid, mixed with weak carboxylic acids in oxidized petroleum products and oil deposits. The strong acids were titrated potentiometrically with alcoholic KOH, the oil or deposits being dissolved in 3:2 ethanol-benzene mixture. The quantity of KOH used until a sharp increase in pH is produced corresponds to the strong acids. The titration is continued until a pH of 9.5 is reached. This additional amount of KOH corresponds to weak acidity. The deposits are titrated, after previous separation by filtration, washing with isooctane and dissolution in alcohol-benzene solvent. The method was tested on mixtures of succinic- and α-naphthalene sulfonic acids dissolved in a diesel fuel. Satisfactory results were obtained if the glass

Card 1/2

Differential potentiometric ...

electrode was kept in distilled water for 5 minutes before titration and the titration conducted rapidly until the pH of the solvent was reached. The precision of the method exceeds that of the method specified in ГОСТ (GOST) 5985-59. There are 2 figures and 7 tables.

Card 2/2

L 10123-63 EPF(c)/BDS/EWT(m) AFFTC/APGC Pr-4 RM/BW/WW/MAY/DJ

ACCESSION NR: AP3001320 S/0933/63/005/000/0236/0243

AUTHOR: Kreyn, S. E.; Rubinshteyn, I. A.; Popova, Ye. A. 67

TITLE: Effect of organosulfur compounds on the oxidizability of lubricating oils [Report presented at the Sixth Scientific Session on the Chemistry of Organosulfur Compounds of Crude Oils and Petroleum Products, held at Ufa, 27 June - 1 July 1961]

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh, v. 5, 1963, 236-243

TOPIC TAGS: lubricating oils, organosulfur compounds, oxidizability, Tuymazy, oil distillates, phenol refining, oxidation products, sulfonic acids, carboxylic acids, sediment formation

ABSTRACT: The oxidizability of lubricating oils containing organosulfur compounds has been studied with oil-distillates from Tuymazy crude, phenol-refined to various degrees and dewaxed, and with several specially prepared specimens.

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L 10123-63

ACCESSION NR: AP3001320 0

Oxidizability was evaluated from the isotherms of oxygen absorption, the nature and quantity of oxidation products, and the amount of sediment formed. Oxidizability was shown to depend primarily upon the concentration and type of organosulfur compounds present. These compounds oxidize more readily than hydrocarbons and when present in small quantities inhibit the oxidation of hydrocarbons by decomposing peroxides formed in hydrocarbon media. In larger quantities the organosulfur compounds are oxidized by oxygen as well, and thus accelerate oxidation of the oil. Oxidation of S-containing oils results in the formation of sulfonic and carboxylic acids. When S content is sufficiently high, the concentration of these acids is a linear function of the total S content. A parabolic dependence was established between the amount of sediment formed as a result of the oxidation of S-containing oils and the total S content. A formula for calculating the amount of sediment formed was derived and verified experimentally. Oils containing about 0.45% S are most resistant to oxidation and form the smallest quantity of oxidation products and sediment. Orig. art. has: 6 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 28May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 009 OTHER: 002

Card 2/2

RUBINSHTEYN, I.A.; SOBOLEV, Ye.P.; REZVINA, S.A.

Effect of organosulfur compounds on the process of deposit formation in diesel fuels. Khim. i tekh. topl. i masel 8 no.10:48-53 O '63. (MIRA 16:11)

SOV/133-59-4-16/32

AUTHOR: Rubinshteyn, I.B., Engineer

TITLE: Machines for the Separation of Sheets Rolled in Packets (Mashiny dlya razdeleniya listov pri prokatke paketnym sposobom)

PERIODICAL: Stal', 1959, Nr 4, pp 344-347 (USSR)

ABSTRACT: A description of two machines for the separation of sheets rolled in packets, designed by TsKBMM TsNIITMASh (Central Design Bureau of Metallurgical Equipment) is given. 1) Roller separating machine (Fig 1, 2 and 3) operates on the continuous bending of the packet around the idling bending roller of a small diameter, supported from three sides by driven rollers of a large diameter. With decreasing diameter of the bending roller, the deformation of the packet increases and thus the shear stress between the sheets which is necessary for their separation. The machine can not only separate packets before doubling and when the rolling is finished but it can also operate as a straightening machine. The machine is at present in operation in a continuous line of the mechanised mill on the Novomoskovskiy Works. 2) Roller vibrational machine for separating strongly welded

Card 1/2

Machines for the Separation of Sheets Rolled in Packets

packets (Fig 4) - packets passed into the machine should be partly hand separated from one corner. Both machines were found to operate satisfactorily. There are 4 figures.

ASSOCIATION: TsKBMM TsNIITMASh

OSTRINSKIY, A.S., inzhener; RUBINSHTEYN, I.B., inzhener.

Straightener for plates with varying cross sections. Vest. mash. 36 no.6:21-23 Je '56. (MLRA 9:10)

(Plates, Iron and steel) (Rolling mills)

OSTRINSKIY, A.S., inzhener; RUBINSHTEYN, I.B., inzhener.

New charging- discharging machines. Vest.mash. 36 no.10:27-28 O '56. (MLRA 9:11)
(Materials handling)

RUBINSHTEYN, I.B.

Technological processes for the production of lined pipes and the equipment for the shops. Biul.tekh.-ekon.inform.Gos.nauch.i tekh.inform. 16 no.4:18-23 '63. (MIRA 16:8)
(Pipe) (Protective coating)

ISTRIN, M. A.; LEVITIN, V. Kh.; RUBINSHTEYN, I. G.; BAZILEVSKIY, V. M.

"Secondary Nonferrous Metals (Handbook. Part I- Preparation and Preliminary Working)," Metallurgizdat, 1950. 475 pp.

Comments and evaluation B-77881, 16 Aug 54

ISTRIN, Mikhail Aleksandrovich; LEVITIN, Vul'f Khananovich; RUBINSHTEYN, Iosif Grigor'yevich; MILLER, Solomon Mikhaylovich; MILLER, L.Ye., kandidat tekhnicheskikh nauk, retsenzent; BELOV, V.Ya., redaktor; CHERNOV, A.N., redaktor; ARKHANGEL'SKAYA, M.S., redaktor izdatel'stva; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Secondary nonferrous metals] Vtorichnye tsvetnye metally; spravochnik. Izd. 3-e, perer. i dop. Pod red. V.IA.Belova. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Pt.1. [Procurement and primary processing] Zagotovka i pervichnaia obrabotka. 1956. 558 p. (MIRA 9:7)
(Nonferrous metals)

L 04255-67 EWT(m)/T DJ

ACC NR: AP6005377 (N) SOURCE CODE: UR/0413/66/000/001/0121/0122

AUTHORS: Vul'fson, D. L.; Rubinshteyn, I. I.; Avrekh, D. E.; Val'tsis, U. A.; Korchinskiy, V. K.; Geyfman, I. Ya.

ORG: none

TITLE: A continuously variable variator of the number of revolutions of an output shaft. Class 47, No. 177724 [announced by Kiev Machine Construction Plant im. M. I. Kalinin (Kiyevskiy mashinostroitel'nyy zavod)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 121-122

TOPIC TAGS: bushing, shaft, speed regulator

ABSTRACT: This Author Certificate presents a continuously variable variator of the number of revolutions of an output shaft. The device contains conical sliding disks with control levers on two parallel shafts. The disks are spanned by an endless flexible traction organ, the tension of which is controlled. To reduce the dimensions of the variator without reducing the transmittable power and to increase the stability of the number of revolutions, it is equipped with an additional shaft situated between the shafts with the sliding disks and parallel to them and having a threaded stem. Rigidly attached to the additional shaft are two cams and a bushing, a control nut that rests on the bushing, and a self-stopping screw pair with a worm gear connected to the bushing by a sliding key. The control levers are

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L 04255-67

ACC NR: AP6005377

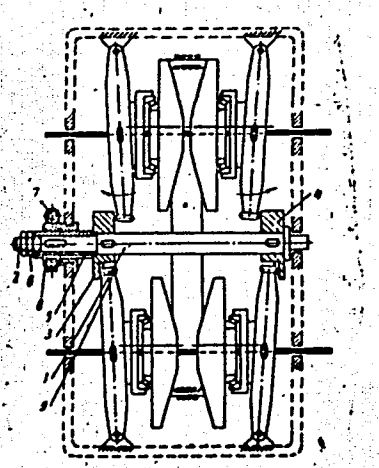
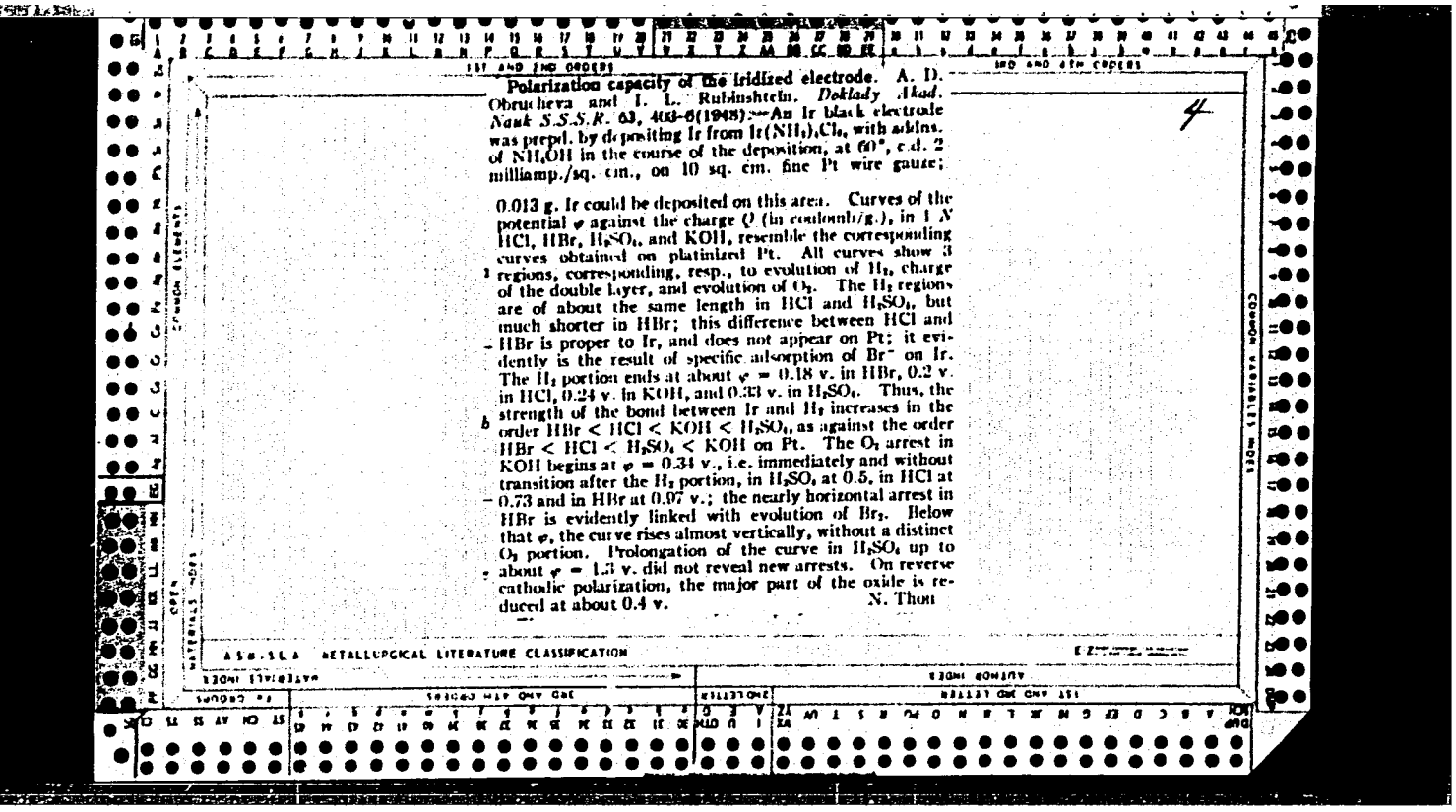


Fig. 1. 1 - additional shaft; 2 - threaded stem; 3 and 4 - cams; 5 - bushing; 6 - control nut; 7 - self-stopping screw pair; 8 - sliding key; 9 - rollers of control levers

double-beat and armless, are equipped with rollers which interact with the cams, and are hinged in the housing. Orig. art. has: 1 diagram.

SUB CODE: 13/ SUBM DATE: 30Nov64

Card 2/2 fv



Polarization capacity of the iridized electrode. A. D. Obrucheva and I. L. Rubinshtein. *Doklady Akad. Nauk S.S.S.R.* 63, 455-6(1948).—An Ir black electrode was prepd. by depositing Ir from $Ir(NH_3)_5Cl_3$ with additns. of NH_4OH in the course of the deposition, at 60°, c.d. 2 milliamp./sq. cm., on 10 sq. cm. fine Pt wire gauze; 0.013 g. Ir could be deposited on this area. Curves of the potential φ against the charge Q (in coulomb/g.), in 1 *N* HCl, HBr, H_2SO_4, and KOH, resemble the corresponding curves obtained on platinized Pt. All curves show 3 regions, corresponding, resp., to evolution of H_2, charge of the double layer, and evolution of O_2. The H_2 regions are of about the same length in HCl and H_2SO_4, but much shorter in HBr; this difference between HCl and HBr is proper to Ir, and does not appear on Pt; it evidently is the result of specific adsorption of Br^- on Ir. The H_2 portion ends at about $\varphi = 0.18$ v. in HBr, 0.2 v. in HCl, 0.24 v. in KOH, and 0.33 v. in H_2SO_4. Thus, the strength of the bond between Ir and H_2 increases in the order HBr < HCl < KOH < H_2SO_4, as against the order HBr < HCl < H_2SO_4 < KOH on Pt. The O_2 arrest in KOH begins at $\varphi = 0.34$ v., i.e. immediately and without transition after the H_2 portion, in H_2SO_4 at 0.5, in HCl at 0.73 and in HBr at 0.97 v.; the nearly horizontal arrest in HBr is evidently linked with evolution of Br_2. Below that φ, the curve rises almost vertically, without a distinct O_2 portion. Prolongation of the curve in H_2SO_4 up to about $\varphi = 1.5$ v. did not reveal new arrests. On reverse cathodic polarization, the major part of the oxide is reduced at about 0.4 v.

N. Thon

RUBINSHTEYN, I.L.

110-3-4/22

AUTHORS: Rives, L.S., Engineer, and Rubinshteyn, I.L., Candidate of Technical Sciences.

TITLE: The Control of High-voltage Mercury-arc Rectifiers by Light Rays (Svetovoye upravleniye vysokovol'tnymi rtutnymi vypryamitelyami)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Vol.29, No.3, pp. 18 - 23 (USSR).

ABSTRACT: High-voltage mercury-arc valves for d.c. transmission have auxiliary supplies and control equipment in a special panel. The auxiliary supplies are at the potential of the cathode of the valve and may, therefore, be at high potential to earth. At sub-stations on the Stalingrad-Donbas transmission line, this voltage may exceed 400 kV. Therefore, auxiliary supplies are made through insulating transformers. Similar transformers are provided for the grid control impulses. Transmission of the control impulse through two stages of insulating transformers distorts the wave-form and gives rise to losses. Control panels used on the Kashira-Moscow line, which operates at 200 kV, were operated manually with insulated rods, but this will not be possible in equipment at 400 kV.
It was accordingly proposed to operate the equipment by light rays at a range of 3 or 4 metres to give safe clearances. This

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method may be used to control either individual valves or groups of valves, and permits of simplified insulating transformers.

Light ray control of switching operations is then described. The simplest circuit for the control of switching operations is given in Fig.1. The light beam is focussed on a photo-cell, reducing its resistance and increasing the current in the relay coil. This simple circuit has a number of disadvantages; for example, the light has to be on all the time and lamp failure could have unfortunate consequences. Another possible circuit is given in Fig.2. The light projector can be arranged to give two different light impulses of different duration, which respectively operate closing and opening relays. In this circuit, the photo-cell passes operating current only whilst a control signal exists; otherwise, it passes only a small current. It is usually necessary to control two and more circuits and so the number of light channels is increased. However, only one intermediate delay relay is used for all channels.

Unlike manual control, remote control by light rays may be used to switch on or off individual circuits simultaneously in the

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valves of all rectifiers of one bridge, or even on all the rectifying sets of a sub-station. Besides transmitting signals from low-voltage to high, the method can be used to transmit signals from the rectifier to the control board.
Light-impulse signalling is then described. Its function is to give on the control panel an indication of abnormal conditions in any circuit. The operating principle of light-impulse signalling are shown by circuits in Fig.3, (transmitting part), and Fig.4 (receiving parts). The operating principles of the two parts are explained.
The transmission of a grid control impulse by a modulated light ray is discussed with reference to the corresponding block circuit diagram for a d.c. line sub-station in Fig.5 and the operation of the system is described. The primary impulse generator comprises six peaking transformers which give six primary electrical impulses in synchronism with the system frequency and spaced at 60° electrical. These impulses are passed to a transmitting block which controls the impulses of the light source. The short light impulses from this source occur at a frequency of 50 c.p.s. and are transmitted to the valve by an optical system. The resulting electrical signals

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from the photo-cell reach the grid signal generator which produces the signals required to control the grid of the high-voltage valve. A special long-life signal lamp was developed under the guidance of I.Sh.Libin and I.S. Marshak; its supply circuit is given in Fig.6 and explained. Photo-cells have considerable inertia which is mainly revealed when the light flux is diminishing. When the light signal has ended the photo-current takes several milli-seconds to fall to the minimum value. As grid control of mercury-arc rectifiers requires a steep-fronted control signal, semi-conducting photo-resistances may be advantageous.

The circuit diagram of the grid signal generator is given in Fig.7. This system makes use of a powerful electronic lamp and operates more stably than the usual thyratron-capacitor circuit; its operation is fully explained. The wave-shape and the principal characteristics of the output light signal are given in Fig.8, which was obtained with a load of 100 Ω. Output voltage and the load resistance are related in Fig.9.

The method of transmitting a control signal by light waves is better than using insulating transformers in that the signal wave-shape and amplitude can be suitably controlled; the insulation is perfect and there is no phase displacement. For

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the production of the light signals, the impulse lamp could be replaced by a germanium light modulator. In this case, the light source is an incandescent lamp, the light from which passes through a germanium diode. This system was investigated by Yu.I. Ukhanov. The method of control by light rays can of course be applied to other kinds of equipment. Engineers V.A. Bogomolov and Ye.L. Gusev participated in the development of the equipment that is described.
There are 9 figures and 2 Russian references

ASSOCIATION: All-Union Electro-technical Institute (Vsesoyuznyy elektrotekhnicheskiy institut)

SUBMITTED: July 15, 1957

AVAILABLE: Library of Congress

Card 5/5 1. Rectifiers-Control 2. Impulse generators

RUBINSHTEYN, I. M., Cand Tech Sci -- (diss) "Designing filters according to given characteristics of ~~working~~ operating attenuation and phase." Len, 1958. 16 ~~23~~ pp (Min of Railways USSR, Len Order of Lenin Inst of Engineers of Railroad Transport im Academician V. N. Obraztsov), 100 copies (KL, 18-58, 100)

5(4) SOV/119-59-1o-15/19

AUTHORS: Rubinshteyn, I. M., Engineer, Simonyan, G. A., Engineer

TITLE: New Instruments for Determining the Composition of a Substance

PERIODICAL: Priborostroyeniye, 1959, Nr 1o, pp 26 - 3o (USSR)

ABSTRACT: A number of new instruments were developed at the Samostoyatel'noye konstruktorskoye byuro priborov i sredstv avtomatizatsii (SKBPSA)(Independent Design-office for Instruments and Automation Devices). A portable rod pH-meter of the type PShP-58, which is suitable for the control of the hydrogen-ion concentration in aqueous solutions under industrial conditions, is first described in the paper under review. A similar instrument of the type PPP-58 is suitable for the determination of the hydrogen-ion concentration in salt extracts from the soil. A number of measurements can be carried out simultaneously with the pH-meter of the type PLP-58. The instrument consists of a multi-electrode block and of a measuring instrument of the type PPP-58. The automatic electronic pH-meter of the type AEP-58 is used for measuring, recording and controling the technological solutions in the textile industry. The installation consists of a pick-up for the pH value, a unit-type pH-meter of the type PVU (deve-

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loped at the TsLA) (Central Laboratory for Automation), and an automatic electronic potentiometer of the type EPP-09. The automatic photocolorimeter of the type AFK-57 is discussed as a further instrument. In this instrument, the light absorption is compared photocolorimetrically between the solution to be measured and a standard. The instrument is used for boiling processes of sulfite-cellulose. The automatic flue-gas controller of the type ARDM-58 measures, records and controls the flue-gas density, and is used in the fish- and meat-industry. The automatic fume-detector of the type ASZ-58 is used in the production of sulfite cellulose for indicating the appearance of undesirable SO_3 within the sulfur gas. The detector operates photoelectrically and is of high sensibility. Finally, the automatic smoke-detector of the type AKSD-57 for ships is discussed. The instrument belongs to the group of photoelectric detectors, for which the air is ducted by ventilators from the rooms to be controlled thru the pick-up and thru a viewing chamber. There are 8 figures.

ARTEM'YEV, Aleksey Vasil'yevich; RUBINSHTEYN, I.M., redaktor; GLUKHOYEDOVA, G.A., tekhnicheskiy redaktor

[Work hygiene in the dairy industry] Gigiena truda rabochego molochnoi promyshlennosti. Moskva, Gos.izd-vo meditsinskoi lit-ry, 1955. 63 p. (MLRA 9:2)
(DAIRYING) (INDUSTRIAL HYGIENE)

LETKOVA, V.Ya.; RUBINSHTEYN, I.M., redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor.

[Care of sick children at home] Ukhod za bol'nym rebenkom v sem'e. Izd. 2-e, dop. Moskva, Gos. izd-vo med. lit-ry, 1954. 50 p. (MLRA 7:11)
(Children--Care and hygiene) (Pediatric nursing)

AUTHOR: Rubinshteyn, I.M., Engineer SOV-28-58-4-15/35

TITLE: Problems of Normalization in Instrument Construction (Voprosy normalizatsii v priborostroyenii)

PERICDICAL: Standartizatsiya, 1958, Nr 4, pp 51 - 53 (USSR)

ABSTRACT: The Tbilisi Independent Structural Bureau for Instruments and Means of Automation carried out the collection and classification of charts, standard specifications and other technical documentation. Analyses of the collected material revealed that there are no standards in designing structural bureau offices for diameters, lengths, tolerances, etc. In order to meet the requirements in this field, the Tbilisi Office established limit standards for admitted materials. The unifying of admissible hardness intervals and coating of materials is now being set up. It is required that standards for instrument construction must be worked out which would contain all important data gathered in this field as well as in aviation electro-engineering, radio-

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Problems of Normalization in Instrument Construction SOV-28-58-4-15/35

engineering and other industrial branches.

ASSOCIATION: Tbilisskoye samostoyatel'noye konstruktorskoye byuro priborov i sredstv avtomatizatsii (Tbilisi Independent Bureau of Instrument Design and Means of Automation)

1. Instruments--Design 2. Instruments--Standards
3. Industrial production--Standards

Card 2/2

RUBINSHTEYN, I.M., inzh.

Problems of standardization in the instrument industry. Standartizatsiia 22 no.4:51-53 Jl-Ag '58. (MIRA 11:10)

1.Tbilisskoye samostoyatel'noye konstruktorskoye byuro priborov i sredstv avtomatizatsii.
(Measuring instruments--Standards)

EL'BERT, B.Ya, professor, zasluzhennyy deyatel' nauki; RUBINSHTEYN, I.S., dotsent; SAKOVICH, A.O., dotsent; VILENCHIK G.Yu., kandidat meditsinskikh nauk; GUREVICH, G.TS, kandidat meditsinskikh nauk; IZRAITEL', N.A., kandidat meditsinskikh nauk; KNIGA, A.N., kandidat meditsinskikh nauk; LEVINA, P.I., kandidat meditsinskikh nauk; MARCHENKO,L.O., kandidat meditsinskikh nauk; RABINOVICH, Ye.M., kandidat meditsinskikh nauk; RUBINSHTEYN, B.B, kandidat meditsinskikh nauk; SAMOKHINA, Z.F., kandidat meditsinskikh nauk; KRASIL'NIKOV: A.P., kandidat meditsinskikh nauk; ZMUSHKO, L.S., nauchnyy sotrudnik; NISENBAUM, I.M., nauchnyy sotrudnik; SOLOV'YANCHIK,S.I., nauchnyy sotrudnik; SUSLOVA, M.N., nauchnyy sotrudnik; POL'SKIY, S., redaktor; KUFTINA, P., tekhnicheskiy redaktor; KALECHITS, G., tekhnicheskiy redaktor.

[Practical manual on medical microbiology and bacteriological methods of sanitation research] Prakticheskoe posobie po meditsinskoi mikrobiologii i sanitarno-bakteriologicheskim metodam issledovanii. Minsk, Gos.izd-vo BSSR, Redaktsiia nauchno-tekhn. lit-ry, 1957. 356 p. (MLRA 10:6)

(MICROBIOLOGY)

USSR / Microbiology. Human and Animal Pathogens. F
Corynebacteria.

Abs Jour: Ref Zhur-Biol., No 2, 1959, 5613.

Author : Rubinshteyn, I. S.; Vilenchik, G. Y.; Kosmandel', R. K.

Inst : Not given.
Title : Laboratory Diagnosis of Diphtheria.

Orig Pub: Zdravookhr. Belorussii, 1958, No 1, 53-54.

Abstract: The diphtheria bacillus has a characteristic appearance when examined under the phase-difference microscope. Instead of phase-contrast illumination, which is not available in all laboratories, the authors suggest the following method: from a 24-48 hour culture on Loffler's medium a drop is prepared in such a way that air bubbles appear under the cover glass. Bacterio-

Card 1/2

USSR / Microbiology. Human and Animal Pathogens. F

Abs Jour: Ref Zhur-Biol., No 2, 1959, 5613.

Abstract: scopy is conducted using the oil immersion objective with closed-down diaphragm and lowered condenser. By this technique the diphtheria bacilli can usually be seen in the air bubbles without mixture with other organisms. The view is similar to the one observed in the phase-difference microscope, differences in the refraction of light in the liquid and in air giving an effect similar to that which appears in phase contrast. -- M. A. Gruzman.

Card 2/2

KLYUVER, G.M. ; RUBINSHTEYN, I.S.

Atypical course of tuberculous meningitis. Zdrav. Belor. 5 no.9: 15-16 S '59. (MIRA 12:12)

1. Iz instituta nevrologii, neyrokhirurgii i fizioterapii i kafedry mikrobiologii Instituta usovershentstvovaniya vrachey.
(MENINGES--TUBERCULOSIS)

RUBINSHTEYN, I.S., dotsent

N.F. Gamaeia's work in field of tuberculosis. Zdrav. Belor. 5 no.11: 63-64 N '59. (MIRA 13:3)
(GAMALEIA, NIKOLAI FEDOROVICH, 1859-1949) (TUBERCULOSIS)

MOKHORT, V.A.; RUBINSHTEYN, I.S.

Diagnosis and clinical aspects of urogenital actinomycosis. Urologiia 21 no.2:39-44 Ap-Je '56. (MLRA 9:12)

1. Iz kafedry urologii (zav. - prof. M.N.Zhukova) Belorusskogo gosudarstvennogo instituta usovershenstvovaniya vrachey.

(ACTINOMYCOSIS,
urogenital system (Rus))
(UROGENITAL SYSTEM, diseases,
actinomycosis (Rus))